

REMARKS

Claims 1-29 and 35-36 are pending in the captioned Application in which claims 1-35 are finally rejected, claims 30-34 are canceled hereby without prejudice, and claim 36 is allowed.

Entry of this Response is proper because it places the captioned Application in condition for allowance as agreed in the Telephone Interview.

Amendment to the Specification:

The Examiner in the Telephone Interview requested certain amendments to the specification and drawing. The specification is amended to conform the item numbers in the specification to those of the amended Figures of the Drawing as set forth below, to correct typographical errors in item numbers, and to add missing item numbers.

These amendments comply with the requests of the Examiner.

Amendment to the Drawing:

Figures 1-4, 5A and 6 of the drawing are amended to include object 60 and cross-hatching so as to conform to the Brief Description of the Drawings in the specification at page 4, lines 1-18, and to be consistent with the description in the specification, for example, at page 7, lines 10-20, at page 12, lines 6-22, at page 14, line 22 through page 15, line 15, at page 17, line 18-30, and at page 18, line 6 through page 19, line 7. In addition, items 10 in Figures 4 and 5A-5B are changed to 10a and 10b, respectively, in view of the slightly different shapes thereof from item 10 of Figures 1-3. In Figure 6, item 10 is re-designated as item 70, and item 15 is re-designated as item 10 in view of it being like item 10 of Figures 1-3, consistently with the amended specification.

These amendments comply with the requests of the Examiner.

Approval of the amendment to the Drawing is solicited.

Amendment to the Claims:

Claims 1, 10, 20 and 35 are amended herein as proposed and agreed in connection with

the Telephone Interview with Examiners Tran and Braun. Claims 3-6, 12-15, 18 and 22-25 depending therefrom are amended for consistency with the claim from which they depend. With the exception of the phrase “without leaving substantial residue” the other changes are wording changes making express that which is inherently present in the claims as presented, and so is not a narrowing amendment of an element or limitation. Certain word arrangements differ from the Examiners’ proposed wording for proper grammatical and syntax, and the word “substantial” is added regarding residue, consistently with the specification. To the extent this amendment does not narrow the scope of any claim element or limitation and so is not limiting of any claim element or limitation, Applicant reserves the right to the benefit of the doctrine of equivalents with respect thereto.

Rejections Under 35 U.S.C. §103(a):

Claims 1-35 are rejected under 35 U.S.C. §103(a) as being unpatentable over US 6,491,781 to Kreckel et al in view of US 4,994,322 to Delgado et al and US 5,723,191 to Plamthottam et al, and US 4,894,283 to Wehr. The rejection is overcome by claims 1, 10, 20 and 35 as presented, and is moot as to claims 30-34 cancelled without prejudice.

Applicant’s invention relates to a re-usable carrier structure in which an adhesive that secures an article (object) being carried is cross-linkable by electromagnetic radiation and/or heat to decrease its adhesion or tackiness thereby to ease release of the article (object) being carried. The adhesive may then be removed from the carrier without leaving substantial residue and the carrier is reusable and may be reused. In reuse, for example, fresh adhesive (e.g., un-cross-linked adhesive) may be applied to the carrier, whereby the carrier may be reused with the un-cross-linked adhesive carrying an article (object) until it is cross linked by UV electromagnetic radiation to ease release of the article (object) being carried, and so forth.

On the other hand, each of the references applied by the Examiner relate to different structures that have different characteristics – most importantly, that of retained tackiness and/or adhesion. As a result, Applicant’s claims differ in one or more patentable ways from these references, whether the references are considered individually or in a legally proper combination.

Kreckel et al relates to an image graphic system comprising a highly tacky adhesive surface 26 of an adhesive carrier 12 adhered to a substrate 14 to releasably hold an image carrier 16. (Figure 1; column 9, lines 33-65). What Kreckel et al describes is a tacky base upon which an image carrier, such as a poster or sign, may be releasably placed and removed many times with the same tacky adhesive retaining its tackiness throughout many placements and removals, so as to be directly reusable. (E.g., Column 1, lines 15-31; column 4, lines 14-22). Consistently therewith, the image carrier is release coated so as to ease its release from the tacky adhesive (Column 4, lines 34-40), i.e. without cross-linking or curing the tacky adhesive to reduce its tackiness or adhesion.

While Kreckel et al provide a greater peel adhesion to substrate 14 than to image carrier 14 as Examiner notes (column 10, lines 18-25), Kreckel et al also states that the interface between highly tacky adhesive surface 26 and adhesive contacting surface 32 is “vital” to performance for “multiple placement and release” of image carrier 16 from adhesive carrier 12. (Column 10, lines 8-13). In other words, adhesive surface 26 must retain its tackiness over many placements of the same or a different image carrier 16 and many removals thereof, and is not cross-linked or cured for having reduced tackiness. This is confirmed at column 11, lines 39-43 where the “reproducible securing” is stated as being desired “over a long period of time.”

Moreover, Kreckel et al describe the interface between adhesive surface 22 and substrate 14 as being “significant to assure controlled but durable secure attachment of adhesive carrier 12 to substrate 14...” which is understood to be for the many placements of the same or a different image carrier 16 and many removals thereof without disturbing the attachment of adhesive carrier 12 to substrate 14. (Column 10, lines 13-17 9emphasis added)).

Thus, Kreckel et al is seen to describe an arrangement wherein the image carrier adheres to a substrate, but not so strongly that it cannot be easily removed, e.g., by peeling, without altering the tackiness of the adhesive. As Examiner recognizes in the rejection, Kreckel et al does not teach the adhesive layer as claimed.

Nothing in Kreckel et al describes or suggests an adhesive that is crosslinked and/or cured for decreasing its tackiness or adhesion. In fact, by requiring the “vital” interface between adhesive 26 and surface 32 and the “significant” durable interface between carrier 12 and

substrate 14, it is submitted that Kreckel et al teaches away from an adhesive layer that exhibits decreased adhesion when exposed to electromagnetic radiation as claimed by Applicant.

Examiner mentions a “transparent adhesive base 24” whereas Kreckel et al describe at column 9, lines 35-38, an adhesive integrity layer 24 that may be transparent, translucent or opaque. Similarly, Examiner mentions an “opaque cover material 34” whereas Kreckel et al describe at column 9, lines 52-54, an integrity layer 34 that may be transparent, translucent or opaque. Integrity layer 34 is part of image carrier 16, i.e. that which is adhered to adhesive layer 26, and is not described as or suggested to be a cover as claimed. It is noted that the Kreckel et al image carrier system may be used for back-lit graphic applications, e.g., back-lit posters, wherein light passes through substrate 14 and adhesive carrier 14 (column 12, line 62 to column 13, line 5), but, consistent with what Kreckel et al describe, the light does not affect the adhesion or tackiness of adhesive surfaces 22 or 26.

Delgado et al relates to a repositionable pressure-sensitive adhesive with certain constituents as described therein. Delgado et al define “repositionable” to refer to “the ability to be repeatedly adhered to and removed from a substrate without substantial loss of adhesion capability.” (Column 1, lines 10-15 and 19-22 (emphasis added)). The adhesives preferred by Delgado et al will increase in bond strength after polymerization. It is submitted that Delgado et al also teaches away from an adhesive layer that exhibits decreased adhesion when exposed to electromagnetic radiation as claimed by Applicant.

Thus if the adhesive of Delgado et al were to be combined with the image carrier system of Kreckel et al what would result is the image carrier system of Kreckel as described, i.e. one in which an image carrier may be repeatedly placed on and removed from a tacky adhesive that retains its tackiness or increases tackiness. Thus the combination of Kreckel et al and Delgado et al, like Kreckel et al alone, teaches away from what Applicant claims.

Crosslinking at column 7, lines 13-14 referred to by the Examiner appears to be one step in the method described by Delgado et al for preparing an aqueous suspension of microspheres which apparently are or are a constituent of the repositionable pressure-sensitive adhesive of Delgado et al, and is not crosslinking to decrease adhesion in the use of an adhesive.

Plamthottam et al ('191) relates to a tackified dual cure pressure sensitive adhesive.

The adhesive has both a high shear adhesion failure temperature and good peel adhesion to a wide variety of substrates. (Column 2, lines 33-39; column 5, lines 58-59). Thus, Plamthottam '191 appears to be directed to an adhesive providing good adhesion after both a first and a second cure, e.g., increasing bond strength after gelation, and not an adhesive that releases when exposed to electromagnetic radiation and/or heat. Plamthottam '191 also appears to be directed to an adhesive providing good adhesion at high temperature that does not release when exposed to electromagnetic radiation and/or heat.

Thus, Plamthottam et al '191, like Kreckel et al and Delgado et al, describes an adhesive that has good adhesion properties and that is not exposed to radiation to decrease its adhesion and/or tackiness for releasing an object adhered thereto. Neither Delgado et al nor Plamthottam et al '191 provide the unobvious elements of the invention missing from Kreckel et al. It is submitted that the result of any purported combination of Kreckel et al, Delgado et al and/or Plamthottam et al '191 would produce the structure described by Kreckel et al, i.e., a structure with a reusable adhesive that retains its tackiness/adhesion, and would not describe or suggest the releasable adhesive structure claimed by Applicant.

Wehr relates to a reusable thermal transfer ribbon 20 for a thermal printer wherein only a portion 32 of the thermal imaging coating material 34 is transferred to document 28 and a portion 38 thereof remains with binding layer 24 and is available for subsequent printing operations. (Column 4, lines 30-52). Coating material 34 is used up and is provided in sufficient quantity that more than one use is needed to use it up. This layer is not "reusable" but is "used up" or consumed over plural uses.

Examiner's allegation that Wehr teaches a reusable adhesive layer is not supported by the reference. What Wehr teaches is a layer 34 that is partially used up or consumed with each thermal printing operation and so may be utilized in more than one such printing operation, at least until it is used up. Nothing in Wehr describes or suggests an adhesive that is cross linked and then is removable as claimed by Applicant.

Examiner refers to Wehr as teaching a "reusable adhesive layer containing ethylene vinyl acetate copolymer" without citation to any particular part of the disclosure of Wehr. Applicant notes that Wehr mentions ethylene/vinyl acetate copolymer in the Tables at column 5, lines 16-

35, in relation to binding layer 24, and in the Table at column 5, line 31 in relation to functional coating 34, and similarly in the Table comprising most of column 6. It is submitted that nothing in Wehr describes ethylene/vinyl copolymer as a cross-linkable adhesive of the sort that Applicant claims. Further, Wehr lists ethylene/vinyl copolymer among other “100% thermoplastic resin materials” at column 5, lines 41-52.

The Examiner combines four widely different references, i.e. Kreckel et al relating to an image graphic system, Delgado et al relating to a pressure sensitive adhesive, Plamthottam et al ‘191 relating to a tackified pressure sensitive adhesive, and Wehr relating to a thermal transfer ribbon, in this rejection. This combination of references is improper under the law because none of the references suggests its combination with the others. Absent some statement or suggestion within the references themselves that they should be combined, there is no nexus which could substantiate the suggested combination.

"Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined *only* if there is some suggestion or incentive to do so."

ACS Hospital Systems, Inc. vs. Montefiore Hospital, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984).

The burden is on the Examiner to particularly identify the suggestion, teaching, or motivation in the reference(s) for their combination, and not just naming similarities between the reference(s) and the claimed invention. *Ruiz v. A.B. Chance Co.*, 234 F.3d 654 (Fed. Cir. 2000), 57 U.S.P.Q.2d 1161, 1166; *In re Dembiczak*, 175 F.3d 994 (Fed. Cir. 1999), 50 U.S.P.Q.2d 1614, 1618.

"[A] rejection cannot be predicated on the mere identification ... of individual components of claimed limitations. Rather, particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed."

Ecolchem Inc. v. Southern California Edison, 56 U.S.P.Q.2d 1065, 1076 (Fed. Cir. 2000) quoting *In re Rouffet*, 149 Fed.3d 1350, 1357 (Fed. Cir. 1998), 47 U.S.P.Q.2d 1453, 1456.

Accordingly, the combination is improper and the rejection should be withdrawn.

Moreover, the combination of Kreckel et al, Delgado et al, Plamthottam et al '191 and Wehr, like Kreckel et al alone, even if proper, requires maintaining or increasing tackiness and strength, and so teaches away from what Applicant claims.

It is "error to find obviousness where [the] references `diverge from and teach away from the invention at hand'." *In re Fine*, 5 U.S.P.Q.2d 1596, 1599 (Fed. Cir. 1988) citing *W. L. Gore & Assoc. v. Garlock, Inc.*, 721 F.2d 1540, 1550, 220 U.S.P.Q. 303, 311 (Fed. Cir. 1983).

On the other hand, Applicant's invention relates to a re-usable carrier in which an adhesive that secures an article (object) being carried is cross-linkable by electromagnetic radiation and/or heat to decrease its adhesion or tackiness thereby to ease release of the article (object) being carried. The adhesive may then be removed from the carrier and the carrier reused. In reuse, for example, fresh adhesive (e.g., un-cross-linked adhesive) may be applied to the carrier, whereby the carrier may be reused with the un-cross-linked adhesive carrying an article (object) until it is cross linked by electromagnetic radiation to ease release of the article being carried, and so forth.

Accordingly, Applicant's amended claim 1 is patentable because it recites:

“a removable tacky adhesive layer disposed on said carrier base,

“said removable tacky adhesive layer being cross-linkable when exposed to electromagnetic radiation, heat, or both heat and electromagnetic radiation through said carrier base, to decrease the adhesion and peel strength of said removable tacky adhesive layer, and

“said removable tacky adhesive layer after being cross-linked having a different release profile and peel strength from the surface of the article than from the adapted surface of said carrier base, wherein the article is removable leaving said removable tacky adhesive layer adhering to said carrier base, and wherein said removable tacky adhesive layer is removable from said carrier base without leaving a substantial residue so that said carrier base is available to be reused with another removable adhesive layer,”

and because it further recites:

“a surface of said carrier base adapted to have a different surface property from a surface of the article, and

“said carrier base being stable to resist deformation by heat at temperatures less than or equal to about 80°C;”

which is not described or suggested by Kreckel et al, Delgado et al and/or Plamthottam et al '191 and/or Wehr, whether taken individually or properly combined.

Further, Applicant's amended claim 10 is patentable because it recites:

“an adhesive laminate disposed on a surface of said carrier base, said adhesive laminate comprising:
“an adhesive base;
“a removable first adhesive layer disposed on a first surface of said adhesive base for removably connecting said carrier base and said adhesive base; and
“a removable second adhesive layer disposed on a second surface of said adhesive base for providing a tacky carrier surface,
“said removable second adhesive layer being cross-linkable when exposed to electromagnetic radiation, heat, or both heat and electromagnetic radiation through said carrier base, to decrease the tackiness and peel strength of said removable second adhesive layer,
“wherein an article carried on the carrier surface is released said removable second adhesive layer is exposed to electromagnetic radiation applied through the transparent portion of the carrier base, heat, or both heat and electromagnetic radiation applied through the transparent portion of the carrier base, leaving said adhesive laminate on said carrier base, and wherein said adhesive laminate is removable from said carrier base without leaving a substantial residue so that said carrier base is available to be reused with another adhesive laminate,”

and because it further recites:

“said carrier base being stable to resist deformation by heat at temperatures less than or equal to about 80°C,”

which is not described or suggested by Kreckel et al, Delgado et al and/or Plamthottam et al '191 and/or Wehr, whether taken individually or properly combined.

Further, Applicant's amended claim 20 is patentable because it recites:

“a removable first adhesive layer removably disposed on a surface of said carrier base; and
“a removable second adhesive layer disposed on said first adhesive layer for providing a tacky carrier surface, and
“said removable second adhesive layer being cross-linkable when exposed to electromagnetic radiation applied through the carrier base, heat, or both heat and electromagnetic radiation applied through the carrier base, to decrease the tackiness and peel strength of said removable second adhesive layer,
“wherein an article carried on the carrier surface is released when said removable

second adhesive layer is cross-linked by exposure to electromagnetic radiation applied through the transparent portion of the carrier base, heat, or both heat and electromagnetic radiation applied through the transparent portion of the carrier base, leaving the removable first and second adhesive layers on said carrier base, and

“wherein said removable first and second adhesive layers are removable from said carrier base without leaving a substantial residue so that said carrier base is available to be reused with another adhesive layer,”

and because it further recites:

“said carrier base being stable to resist deformation by heat at temperatures less than or equal to about 80°C,”

which is not described or suggested by Kreckel et al, Delgado et al and/or Plamthottam et al ‘191 and/or Wehr, whether taken individually or properly combined.

Finally, Applicant’s amended claim 35 is patentable because it recites:

“a carrier structure having a support member and adapted for receiving a cover;

“a carrier base disposed on the support member of said carrier structure, wherein at least a portion of said carrier base is transparent to ultraviolet radiation, and wherein said carrier base is formed of a material that is stable at temperatures less than about 80°C; and

“a removable cross-linkable tacky adhesive layer disposed on said carrier base for adhesively holding one or more objects, wherein said removable cross-linkable tacky adhesive layer becomes cross-linked upon exposure to ultraviolet radiation applied through the transparent portion of said carrier base layer thereby to exhibit a reduction of adhesiveness and peel strength, and

“a cover disposed on said carrier structure, wherein said cover is of a material opaque to ultraviolet radiation for blocking ultraviolet radiation from cross-linking said removable cross-linkable tacky adhesive layer,

“wherein one or more objects adapted to be carried on said removable cross-linkable tacky adhesive layer are released when said cover is removed and said removable cross-linkable tacky adhesive layer is cross-linked by exposure to ultraviolet radiation applied through the transparent portion of the carrier base, and said removable cross-linkable tacky adhesive layer is removable from said carrier base without leaving a substantial residue so that said carrier base is available to be reused with another adhesive layer,”

and because it further recites:

“a cover disposed on said carrier structure, wherein said cover is of a material opaque to ultraviolet radiation for blocking ultraviolet radiation from cross-linking said cross-linkable tacky adhesive layer,

which is not described or suggested by Kreckel et al, Delgado et al and/or Plamthottam et al '191 and/or Wehr, whether taken individually or properly combined.

Applicant's claims 2-9, 11-19, 21-29 and 31-34 are patentable at least because they depend from one of patentable claims 1, 10, 20 and 30. In addition, claims 2, 11 and 21 recite various carrier bases with which at least the structure described by Kreckel is incompatible, claims 5, 6, 14, 15, 24 and 25 recite losses of peel strength whereas each reference describes retention of adhesion/peel strength, claims 7, 8, 16, 17, 26 and 27 recites carrier base stability at temperatures of 150°C and 300°C, claims 9, 19, and 29 recite the carrier base is releasably supported by a carrier frame, claim 18 recites an adhesive base for the first and second adhesive layers, claim 28 recites an adhesive liner between the first and second adhesive layers, and claim 34 recites a liner layer between the first and second adhesive layers, none of which are described or suggested by Kreckel et al, Delgado et al and/or Plamthottam et al '191 and/or Wehr, whether taken individually or in proper combination.

Accordingly, the rejection under 35 U.S.C. §103(a) is overcome and should be withdrawn.

Submission of Drawings:

Submitted herewith are replacement formal drawings that include the amendments to the Drawing as set forth herein above. Acceptance of the amended drawings and confirmation thereof in the next paper is solicited.

Conclusion:


Applicant respectfully requests that the present Amendment be entered, that the rejection be withdrawn, and that the Application including claims 1-29 and 35-36 be allowed and passed to issuance.

The total number of claims and the number of independent claims are not increased in this response and so no fee therefor is due. Should any fee be due in consequence of this

response, please charge such fee and deposit any refund to Deposit Account 04-1406.

The Examiner is again thanked for granting a telephone interview and is requested to telephone the undersigned attorney if there is any question or if prosecution of this Application could be furthered by telephone.

Respectfully submitted,
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November 22, 2004

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AMENDMENT TO THE DRAWING

Please amend the Figures of the Drawing as follows:

Figure 1 is amended by adding cross hatching and object 60.

Figure 2 is amended by adding cross hatching and object 60.

Figure 3 is amended by adding cross hatching and object 60.

Figure 4 is amended by adding cross hatching and object 60, and by changing designator "10" to – 10a –.

Figure 5A is amended by adding cross hatching and object 60, and by changing designator "10" to – 10b –.

Figure 5B is amended by adding object 60 and by changing designator "10" to – 10b –.

Figure 6 is amended by adding cross hatching, by changing designator "10" to – 70 – and by changing designator "15" to – 10 –.